

In the Claims

1-10. (cancelled)

11. (new) A filter element, comprising:

a filter cylinder having a filter mat web arranged in a series of folds adjacent to one another at least in individual areas thereof, each of said folds having two radial members extending radially inwardly and connected by a crown on radial outward fold ends, said filter mat web having two web ends extending a height of said filter mat web and connected to one another at a junction point forming said filter mat web into an annular element, two of said folds being adjacent to said junction point and on opposite sides thereof;

a fluid permeable support tube surrounding said filter cylinder; and

a retaining device with retaining elements overlapping said two of said folds on outer surfaces of said radial members thereof remote from said junction point;

whereby, when fluid to be filtered flows through said filter element from an interior thereof to an exterior thereof, said retaining device resists bulging of said two of said folds and separation of said web ends of said filter mat web.

12. (new) A filter element according to claim 11 wherein

said ends of said filter mat web are joined along end edges facing interiorly of said annular element; and

said crowns of two of said folds face said support tube.

13. (new) A filter element according to claim 12 wherein
said filter mat web comprises a flexible mat of metal-free, plastic-supported filter mats.
14. (new) A filter element according to claim 13 wherein
said junction point comprises a fusion seam.
15. (new) A filter element according to claim 14 wherein
said filter mat web has dimensions allowing reversal of said annular element, whereby
said fusion seam can be formed on an exterior of said annular element and then be reversed to be
located in an interior of said annular element.
16. (new) A filter element according to claim 11 wherein
said retaining elements comprise retaining projections extending radially inwardly from
an inner surface of said support tube.
17. (new) A filter element according to claim 16 wherein
said support tube comprises a transfer-molded plastic tube with said retaining projections
formed integrally thereon.
18. (new) A filter element according to claim 16 wherein
one of said projections comprises a series of members spaced by interstices and arranged
along a length of said support tube.

19. (new) A filter element according to claim 11 wherein

said retaining device comprises a U-shaped clamping element with legs thereof forming said retaining elements and with a bight portion thereof connecting said legs and being adjacent an inner surface of said support tube.

20. (new) A filter element according to claim 15 wherein

said dimensions are determined by the following relationships

$$L_M = 2 * F_{A_{12}} * \left(F_H - 2 * M + \frac{\pi * M}{2} \right)$$

$$D_{a_{max}} = D_i + 2 * L_{max}$$

$$L_{max} = \frac{D_{a_{max}} - D_i}{2}$$

$$D_{12} = \frac{F_{A_{12}} * F_D}{\pi}$$

$$L_{M_{max}} = D_{a_{max}} * \pi$$

$$D_{a_{max}} = \frac{L_{M_{max}}}{\pi}$$

$$D_{a_{max}} = D_i + 2 * L_{max}$$

$$L_{max} = \frac{D_{a_{max}} - D_i}{2}$$

$$L_{\max} = \frac{\frac{L_{M_{\max}}}{\pi} - D_i}{2}$$

$$L_{\max} = \frac{L_{M_{\max}} - F_{ANZ} * F_D}{2 * \pi}$$

$$L_{\max} = \frac{F_{ANZ} * \left(F_H - 2 * M + \frac{\pi * M}{2} - \frac{F_D}{2} \right)}{\pi}$$

where

- F_{ANZ} = number of folds in said filter mat web
 F_H = height of each fold
 F_D = thickness of each fold
 M = strength of material of structure of said filter mat web
 L_M = extended length of said filter mat web
 $L_{M_{\max}}$ = maximum extended length of said filter mat web
 D_{amax} = maximum external diameter of a filter disk formed from said annular element
 D_i = internal diameter of said filter disk formed from said annular element
 L_{\max} = maximum length of said filter cylinder .